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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,599

Applicant(s)

KURT ET AL.

Examiner

ABU SHOLEMAN

Art Unit

4148

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment

1. This action is in response to the request for re-consideration filed 10/27/2005.
2. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Examiner Notes

3. Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Specification

4. The disclosure is objected to because of the following informalities: a reversible photosensitive material. It did not mention in the specification about reversible photosensitive material.

Appropriate correction is required.

Claim Objections

5. Claim 9 recites the limitation "a reversible photosensitive material" in 6. It is not clear to an examiner. Therefore, Examiner is considering it as a photosensitive material.
6. Claims 3, 6 recites the limitation "a spacer" in 2. It is not clear to an examiner. Therefore, Examiner is considering it as a space between photopolymers and photosensitive material.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because of the following reason: The claim fails to place the invention squarely within one statutory class of invention. On page 3, lines 5-11 of the instant specification, applicant has provided evidence that applicant intends the "information carrier" to include signals. As such, the claim is drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim(s) is/are not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical article or object and such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.
9. Claims 2-10 are rejected under 35 U.S.C. 101 as non-statutory for at least the reason stated above. Claims 2-10 are depended on claim 1, however, they do not add

any feature or subject matter that would solve any of the non-statutory deficiencies of claim 1.

10. Claim 5 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because of the following reason: The claim fails to place the invention squarely within one statutory class of invention. On page 3, lines 5-11 of the instant specification, applicant has provided evidence that applicant intends the "information carrier" to include signals. As such, the claim is drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim(s) is /are not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical article or object and such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.

11. Claims 6-7 are rejected under 35 U.S.C. 101 as non-statutory for at least the reason stated above. Claims 6-7 are depended on claim 5, however, they do not add any feature or subject matter that would solve any of the non-statutory deficiencies of claim 1.

12. Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because of the following reason: The claim fails to place the invention squarely within one statutory class of invention. On page 3, lines 5-11 of the instant specification, applicant has provided evidence that applicant intends the "information carrier" to include signals. As such, the claim is drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim(s) is /are not statutory. Energy is not a series of steps or acts and thus is not a process.

Energy is not a physical article or object and such is not a machine or manufacture.

Energy is not a combination of substances and therefore not a composition of matter.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Atherton et al (patent # 5,461,239)(hereinafter Atherton).

As per claim 5, Atherton expressly discloses “An information carrier” as (column 1, line 10-15, information contained on the cards)” comprising : “a diffractive layer made of photopolymers” as (column 43, Fig 37, optical memory medium consists of a photopolymer which includes a diffractive grating), “for delivering a spackle pattern when illuminated by a light source” as (column 43, Fig 37, photopolymer of a diffractive grating delivers a spectral line or pattern) , and “a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the spackle pattern” as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), “said spatial filtering layer being aligned with respect to the diffractive layer” as (column 35, line 10-20, photosensitive layer of optical memory aligned with diffractive grating),

As per claim 6, Atherton expressly discloses "further comprising a spacer for separating the diffractive layer from the spatial filtering layer" as (column 43, Fig 37, space between diffractive layer and photosensitive material), "said spacer having a width which is larger than the wavelength of the light source and smaller than the width of the diffractive layer" as (column 35, Fig 27, wavelength is used to record data in the photosensitive optical memory medium and spacer between those layer is larger than wavelength and smaller than the width of diffractive grid).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atherton et al (patent # 5,461,239)(hereinafter Atherton) in view of Nagai et al (WO 00/67257)(hereinafter Nagai).

As per claim 1, Atherton discloses "An information carrier" as (column 1, line 10-15, information contained on the cards) comprising : "a diffractive layer made of photopolymers" as (column 43, Fig 37, optical memory medium consists of a photopolymer which includes a diffractive grating), "for delivering a spackle pattern

when illuminated by a light source" as (column 43, Fig 37, photopolymer of a diffractive grating delivers a spectral line or pattern), and "a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the spackle pattern" as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), "said spatial filtering layer being aligned with respect to the diffractive layer" as (column 35, line 10-20, photosensitive optical memory aligned with diffractive grating), "and a detection layer for transforming said filtered optical signal into an electrical signal" as (column 7, line 29-31, an electrical signal is produced by the optical detector indicative of the presence of the diffractive strip), but fails to disclose "from which a cryptographic key is generated"

However, Nagai discloses "from which a cryptographic key is generated" as (page 87, line 1-5, the reproduced signal to the key information which is a generated cryptographic key).

Atherton and Nagai are analogous arts because they are the same field of endeavor of photoelectric technology for a storage medium.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Atherton by including a converting a key from electrical signal that taught by Nagai because it would provide a legitimate key to the proper user for an electronic information (Page 1, line 13-14).

As per claim 2, Atherton expressly fails to disclose "wherein the detection layer is made of a patterned photoelectric material".

However, Nagai discloses "wherein the detection layer is made of a patterned photoelectric material" as (page 86, line 23-24, the optical pickup is made of a photoelectrical element).

As per claim 3, Atherton " further comprising a spacer for separating the diffractive layer from the spatial filtering layer" as (column 43, Fig 37, space between diffractive layer and photosensitive material), "said spacer having a width which is larger than the wavelength of the light source and smaller than the width of the diffractive layer" as (column 35, Fig 27, wavelength is used to record data in the photosensitive optical memory medium and spacer between those layer is larger than wavelength and smaller than the width of diffractive grid)

As per claim 4, Nagai discloses " a device for reading an information carrier as claimed in claim 1" as (page1, line 6-7, a device for recording and reproducing apparatus), said device comprising: "means for computing a cryptographic key from the electrical signal delivered by the detection layer" as (page 87, line 1-2, the photoelectrically signal from a layer to produce the key information which is an encryption key) and "means for decrypting encrypted data contained in the information carrier based on the cryptographic key" as [page 87, line 12-14, the cipher decoder

decrypts the encrypted content using the decipher key which is bases on the key information).

As per claim 8, Atherton expressly fails to disclose "wherein the detection array is made of a patterned photoelectric material".

However, Nagai discloses "wherein the detection array is made of a patterned photoelectric material" as (page 86, line 23-24, the optical pickup is made of a photoelectrical element).

As per claim 10, Atherton discloses " holographic exposing a layer of photopolymer so as to create a diffractive structure" as (column 44, line 40-45, holograms on the cards), " illuminating at the same time said photopolymer layer so as to polymerize said diffractive structure" as (column 43, Fig 37, optical memory medium consists of a photopolymer which includes a diffractive grating), and " a layer made of photosensitive material through the diffractive structure so as to form a spatial filter having a binary mask including activated and non-activated areas" as (column 35, Fig 27, a photosensitive optical memory medium is consist of memory array which is a binary mask), " an activation of said photosensitive material being performed when an intensity of a speckle pattern delivered by the diffractive structure for a given wave front of the light source is higher than a predetermined threshold" as (column 35, Fig 27, photosensitive material gets active during higher intensity of pattern from diffraction grating).

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atherton et al (patent # 5,461,239)(hereinafter Atherton) in view of Nagai et al (WO 00/67257)(hereinafter Nagai).

As per claim 7, Atherton expressly discloses "a detection layer for transforming said filtered optical signal into an electrical signal" as (column 7, line 29-31, an electrical signal is produced by the optical detector indicative of the presence of the diffractive strip), but fails to disclose " Nagai discloses "means for computing a cryptographic key from said electrical signal and means for decrypting encrypted data contained in the information carrier based on the cryptographic key".

However, Nagai discloses "means for computing a cryptographic key from said electrical signal " as (page 87, line 1-2, electrical signal to the key which is an encryption key) and "means for decrypting encrypted data contained in the information carrier based on the cryptographic key" as (page 87, line 12-14, the cipher decoder decrypts the encrypted content using the decipher key which is bases on the key information).

Atherton and Nagai are analogous arts because they are the same field of endeavor of photoelectric technology for a storage medium.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Atherton by including a

converting a key from electrical signal that taught by Nagai because it would provide a legitimate key to the proper user for an electronic information (Page 1, line 13-14).

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atherton et al (patent # 5,461,239)(hereinafter Atherton) in view of Nagai et al (WO 00/67257)(hereinafter Nagai).

As per claim 9, Atherton discloses " a device for reading an information carrier comprising a diffractive layer for delivering a speckle pattern when illuminated by a light source" as (column 43, Fig 37, photopolymer of a diffractive grating delivers a spectral line or pattern), said device comprising: " a spatial filter for delivering a filtered optical signal from the speckle pattern" as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), "said spatial filter including a binary mask made of a reversible photosensitive material such that said binary mask is created every time an information carrier is inserted into said device" as (column 35, line 5-15, photosensitive optical memory is made of binary array), "a detector array for transforming the filtered optical signal into an electrical signal" as (column 7, line 29-31, an electrical signal is produced by the optical detector indicative of the presence of the diffractive strip) , but fails to disclose " means for computing a cryptography key from said electrical signal, and means for decrypting encrypted data contained in the information carrier from the cryptography key".

However, Nagai expressly discloses, "means for computing a cryptographic key from said electrical signal " as (page 87, line 1-2, the photoelectrically signal from a layer to produce the key information which is an encryption key) and "means for decrypting encrypted data contained in the information carrier based on the cryptographic key" as (page 87, line 12-14, the cipher decoder decrypts the encrypted content using the decipher key which is bases on the key information).

Atherton and Nagai are analogous arts because they are the same field of endeavor of photoelectric technology for a storage medium.

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Atherton by including a converting a key from electrical signal that taught by Nagai because it would provide a legitimate key to the proper user for an electronic information (Page 1, line 13-14).

Response to Arguments

In the remarks applicant argues that cited reference fails to teach:

1) "a diffractive layer made of photopolymers, a special filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the speckled pattern generated by the diffractive layer, the special filtering layer being aligned with respect to the diffractive layer, and a detection layer for transforming the filtered optical signal into an electrical signal from which a cryptographic key is generated".

II) "a diffractive layer made of photopolymers, a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the speckled pattern, with the spatial filtering layer being aligned with respect to the diffractive layer".

II) "a diffractive layer for delivering a speckled pattern with a spatial filter for delivering a filtered optical signal from the speckled pattern, with the spatial filter including a binary mask made of a reversible photosensitive material such that the binary mask is created every time an information carrier is inserted into the device, with a detector array for transforming the filtered optical signal into an electrical signal and means for computing a cryptographic key from the electrical signal and means for decrypting encrypted data contained in the information carrier from the cryptographic key".

In response to applicant's arguments,

I) Atherton et al. (US PN 5461239) discloses a diffractive layer made of photopolymers" as (column 43, Fig 37, optical memory medium consists of a photopolymer which includes a diffractive grating), "a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the spackle pattern by diffractive layer" as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), "the spatial filtering layer being aligned with respect to the diffractive layer" as (column 35, line 10-20, photosensitive optical

memory aligned with diffractive grating), "and a detection layer for transforming said filtered optical signal into an electrical signal" as (column 7, line 29-31, an electrical signal is produced by the optical detector indicative of the presence of the diffractive strip), but fails to disclose "from which a cryptographic key is generated"

However, Nagai discloses "from which a cryptographic key is generated" as (page 87, line 1-5, the reproduced electric signal to the key information which is a generated cryptographic key ,).

II) Atherton discloses "a diffractive layer made of photopolymers" as (column 43, Fig 37, optical memory medium consists of a photopolymer which includes a diffractive grating), "a spatial filtering layer including a binary mask made of a photosensitive material for delivering a filtered optical signal from the spackle pattern" as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), "with the spatial filtering layer being aligned with respect to the diffractive layer" as (column 35, line 10-20, photosensitive layer of optical memory aligned with diffractive grating).

III) Atherton discloses "a diffractive layer for delivering a speckle pattern with" as (column 43, Fig 37, photopolymer of a diffractive grating delivers a spectral line or pattern), " a spatial filter for delivering a filtered optical signal from the speckle pattern" as (column 35, line 5-15, a new photosensitive optical memory medium is delivering a optical signal from the spectral line or pattern of the diffractive grating), "with the spatial

filter including a binary mask made of a reversible photosensitive material such that said binary mask is created every time an information carrier is inserted into the device" as (column 35, line 5-15, photosensitive optical memory is made of binary array), " with a detector array for transforming the filtered optical signal into an electrical signal" as (column 7, line 29-31, an electrical signal is produced by the optical detector indicative of the presence of the diffractive strip) , but fails to disclose " means for computing a cryptography key from the electrical signal, and means for decrypting encrypted data contained in the information carrier from the cryptography key".

However, Nagai expressly discloses , "means for computing a cryptographic key from the electrical signal " as (page 87, line 1-2, the photoelectrically signal from a layer to produce the key information which is an encryption key) and "means for decrypting encrypted data contained in the information carrier based on the cryptographic key" as (page 87, line 12-14, the cipher decoder decrypts the encrypted content using the decipher key which is based on the key information).

Therefore, Atherton in view of Nagai teaches the limitations where optical memory medium consists of photopolymers that convert optical signal into electrical signal combine with Nagai produce an encryption key from electrical signal as claimed by applicants.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Doe whose telephone number is (571) 270-7314. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.

If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Thomas Pham, can be reached at the following telephone number: (571) 272-3689.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 28, 2008

Abu Sholeman
Examiner
Art Unit 4148

/Thomas K Pham/
Supervisory Patent Examiner, Art Unit 4148

